INDEXES

Volume 8, 1979

The indexes in this issue cover
Volumes 1—8

(Figures in bold type refer to the volume number)

INDEX OF AUTHORS

Aarons, L. J., **5**, 359
Ahluwalia, J. C., **2**, 203
Allen, N. S., **4**, 533
Ambroz, H. B., **8**, 353
Atkinson, D., **8**, 475
Baker, A. D., **1**, 355
Bartlett, P. D., **5**, 149
Baxendale, J. H., **7**, 235
Beattie, I. R., **4**, 107
Bell, R. P., **3**, 513
Bentley, P. H., **2**, 29
Berkoff, C. E., **3**, 273
Bird, C. W., **3**, 309
Blandamer, M. J., **4**, 55
Blundell, T. L., **6**, 139
Boelens, H., **7**, 167
Bradshaw, T. K., **6**, 43
Braterman, P. S., **2**, 271
Breslow, R., **1**, 553
Brown, I. D., **7**, 359
Brown, K. S., jun., **4**, 263
Brundle, C. R., **1**, 355
Buchanan, G. L., **3**, 41
Burdett, J. K., **3**, 293; **7**, 507
Burgess, J., **4**, 55
Burrows, H. D., **3**, 139
Burtles, S. M., **7**, 201
Butterworth, K. R., **7**, 185
Cadogan, J. I. G., **3**, 87
Carabine, M. D., **1**, 411
Cardin, D. J., **2**, 99
Carless, H. A. J., **1**, 465
Casellato, U., **8**, 199
Çetinkaya, B., **2**, 99
Chamberlain, J., **4**, 569
Chatt, J., **1**, 121
Chivers, T., **2**, 233
Clark, G. M., **5**, 269
Collins, C. J., **4**, 251
Colvin, E. W., **7**, 15
Connor, J. N. L., **5**, 125
Corfield, G. C., **1**, 523
Cornforth, J. W., **2**, 1
Cotton, F. A., **4**, 27
Coulson, E. H., **1**, 495
Cowan, J. M., **8**, 419
Coyle, J. D., **1**, 465; **3**, 329; **4**, 523
Cragg, G. M. L., **6**, 393
Cramer, R. D., **3**, 273
Crammer, B., **6**, 431
Cross, R. J., **2**, 271
Curthoys, G., **8**, 475
Dack, M. R. J., **4**, 211
Dainton, F. S., **4**, 323
Dalton, H., **8**, 297
Davies, D. I., **8**, 171
de Rijke, D., **7**, 167
de Valois, P. J., **7**, 167
Dobson, J. C., **5**, 79
Dowle, M. D., **8**, 171
Doyle, M. J., **2**, 99
Drummond, I., **2**, 233
Elliott, M., **7**, 473
Eschenmoser, A., **5**, 377
Evans, D. A., **2**, 75
Fenby, D. V., **3**, 193
Fenton, D. E., **6**, 325; **8**, 199
Ferguson, L. N., **4**, 289
Fisher, L. R., **6**, 25
Flygare, W. H., **6**, 109
Forage, A. J., **8**, 309
Fry, A., **1**, 163
Garson, M. J., **8**, 539
Georghiou, P. E., **6**, 83
Gibson, K. H., **6**, 489
Gillespie, R. J., **8**, 315
Goodings, E. P., **5**, 95
Gray, B. F., **5**, 359
Green, C. L., **2**, 75
Greenhill, J. V., **6**, 277
Greenwood, N. N., **3**, 231
Grey Morgan, C., **8**, 367
Griffiths, J., **1**, 481
Grossert, J. S., **1**, 1
Groves, J. K., **1**, 73
Guilford, H., **2**, 249
Gutteridge, N. J. A., **1**, 381
Haines, R. J., **4**, 155
Hall, G. G., **2**, 21
Hall, L. D., **4**, 401
Hall, T. W., **5**, 431
Halliwell, H. F., **3**, 373
Hamdan, I. Y., **8**, 143
Hamer, G., **8**, 143
Harmony, M. D., **1**, 211
Harris, K. R., **5**, 215
Harris, R. K., **5**, 1
Hartley, F. R., **2**, 163
Hartshorn, S. R., **3**, 167
Henderson, J. W., **2**, 397
Hepler, L. G., **3**, 193
Hilburn, M. E., **8**, 63
Hinchcliffe, A., **5**, 79
Hore, P. J., **8**, 29
Horton, E. W., **4**, 589
Hudson, M. F., **4**, 363
Huntress, W. T., jun., **6**, 295
Hutchinson, D. W., **6**, 43
Ikan, R., **6**, 431
Isaacs, N. S., **5**, 181
Isbell, H. S., **3**, 1
Jaffé, H. H., **5**, 165
James, A. M., **8**, 389
Jamieson, A. M., **2**, 325
Janes, N. F., **7**, 473
Jenkins, J. A., **6**, 139
Johnson, A. W., **4**, 1
Johnson, S. P., **5**, 441
Johnstone, A. H., **7**, 317
Joslin, C. G., **8**, 29
Jotham, R. W., **2**, 457
Kalyanasundaram, K., **7**, 453
Keenan, A. G., **8**, 259
Kemp, T. J., **3**, 139; **8**, 353
Kennedy, J. F., **2**, 355; **8**, 221
Kennewell, P. D., **4**, 189
Kenny, A. W., **4**, 90
King, G. A. M., **7**, 297
Kirby, G. W., **6**, 1
Kitaigorodsky, A. I., **7**, 133
Koch, K. R., **6**, 393
Kresge, A. J., **2**, 475
Krishnaji, **7**, 219
Lappert, M. F., **2**, 99
Lee-Ruff, E., **6**, 195
Leigh, G. J., **1**, 121; **4**, 155
Lemieux, R. U., **7**, 423
Leznoff, C. C., **3**, 65
Lindoy, L. F., **4**, 421
Linford, R. G., **1**, 445
Lipscomb, W. N., **1**, 319
Lynch, J. M., **3**, 309

McKean, D. C., **7**, 399
McKellar, J. F., **4**, 533
McKervey, M. A., **3**, 479
McLauchlan, K. A., **8**, 29
McNab, H., **7**, 345
Mackie, R. K., **3**, 87
Maitland, G. C., **2**, 181
Manning, P. G., **5**, 233
Maret, A. R., **2**, 325
Mason, R., **1**, 431
Mayo, B. C., **2**, 49
Meadowcroft, A. E., **4**, 99
Menger, H. W., **2**, 415
Midgley, D., **4**, 549
Millen, D. J., **5**, 253
Mills, R., **5**, 215
Moore, H. W., **2**, 415
Morley, R., **5**, 269
Morris, J. H., **6**, 173
Muiheirn, L. F., **1**, 259
Munn, A., **4**, 87
Newman, J. F., **4**, 77
Nightingale, W. H., **7**, 195
Norman, R. O. C., **8**, 1
North, A. M., **1**, 49
Oakenfull, D. G., **6**, 25
Overton, K. H., **8**, 447
Page, M. I., **2**, 295
Perkins, P. G., **6**, 173
Pletcher, D., **4**, 471
Poliakoff, M., **3**, 293; **7**, 527
Prakash, V., **7**, 219
Pratt, A. C., **6**, 63
Ramm, P. J., **1**, 259
Rao, C. N. R., **5**, 297
Ratledge, C., **8**, 283
Rattee, I. D., **1**, 145
Redl, G., **3**, 273
Richards, D. H., **6**, 235
Ritch, J. B., jun., **5**, 452
Roberts, M. W., **6**, 373
Robinson, F. A., **5**, 317
Roche, M., **5**, 165
Rodgers, M. A. J., **7**, 235
Rose, A. E. A., **6**, 173
Rouvray, D. H., **3**, 355
Rowlinson, J. S., **7**, 329
Sanders, J. K. M., **6**, 467
Sarma, T. S., **2**, 203
Satchell, D. P. N., **4**, 231; **6**, 345
Satchell, R. S., **4**, 231
Schlegel, W., **7**, 177
Senthilnathan, V. P., **5**, 297
Shorter, J., **7**, 1
Simpson, T. J., **4**, 497
Singh, S., **5**, 297
Smith, E. B., **2**, 181
Smith, K., **3**, 443
Smith, K. M., **4**, 363
Smith, W. E., **6**, 173
Snell, K. D., **8**, 259
Stacey, M., **2**, 145
Staunton, J., **8**, 539
Stevens, M. F. G., **7**, 377
Stoddart, J. Fraser, **8**, 85
Suckling, C. J., **3**, 387
Suckling, K. E., **3**, 387
Sutherland, R. G., **1**, 241
Sutton, D., **4**, 443
Swan, J. S., **7**, 201
Swindells, R., **7**, 212
Symons, M. C. R., **5**, 337
Takken, H. J., **7**, 167
Taylor, J. B., **4**, 189
Theobald, D. W., **5**, 203
Thomas, T. W., **1**, 99
Thompson, M., **1**, 355
Thornber, C. W., **8**, 563
Tincknell, R. C., **5**, 463
Toennies, J. P., **3**, 407
Tolman, C. A., **1**, 337
Truax, D. R., **5**, 411
Twitchett, H. J., **3**, 209
Tyman, J. H. P., **8**, 499
Underhill, A. E., **1**, 99
van Dort, J. M., **7**, 167
van der Linde, L. M., **7**, 167
Vaughan, K., **7**, 377
Vidali, M., **8**, 199
Vigato, P. A., **8**, 199
Wain, R. L., **6**, 261
Walker, E. R. H., **5**, 23
Walker, I. C., **3**, 467
Waltz, W. L., **1**, 241
Ward, I. M., **3**, 231
White, A. J., **3**, 17
Whitfield, R. C., **1**, 27
Wieser, H., **5**, 411
Wiesner, K., **6**, 413
Williams, G., **7**, 89
Wilson, A. D., **7**, 265
Wilson, E. B., **1**, 293
Yoffe, A. D., **5**, 51

INDEX OF TITLES

Absorption bands in the spectra of stars, a crystal field approach, **5**, 233
Acidity of solid surfaces, **8**, 475
Across the living barrier, **6**, 325
Acylation by ketens and isocyanates, a mechanistic comparison, **4**, 231
Acylation, Friedel–Crafts, of alkenes, **1**, 73
Adamantane rearrangements, **3**, 379
Affinity chromatography, chemical aspects of, **3**, 249
Alcohols and amines, conformational analysis of, **5**, 411
Alkali-metal complexes in aqueous solution, **4**, 549
Alkaloids, aconite, synthesis of, **6**, 413
Alkenes, the Friedel–Crafts acylation of, **1**, 73
Aluminium phosphates, the chemistry and binding properties of, **6**, 173
Amines and alcohols, conformational analysis of, **5**, 411
Aphids and scale insects, their chemistry, **4**, 263
Application of electrochemical techniques to the study of homogeneous chemical reactions, **4**, 471
Applications of e.s.r. spectroscopy to kinetics and mechanism in organic chemistry, **8**, 1
Application of research findings to the development of commercial flavourings, **7**, 177
Aqueous mixtures, kinetics of reactions in, **4**, 55
Aqueous solution, micelles in, **6**, 25
Aryl cations—new light on old intermediates, **8**, 353
Aryldiazonium cations, co-ordination chemistry of, **4**, 443
Atmosphere, interactions in, of droplets and gases, **1**, 411
Autocatalysis, **7**, 297
Azidoquinones and related compounds, chemistry of, **2**, 415
Azobenzene and its derivatives, photochemistry of, **1**, 481

Bile pigments, **4**, 363
Binding of heavy metals to proteins, **6**, 139
Binding properties and chemistry of aluminium phosphates, **6**, 173
Biological surfaces, molecular aspects of, **8**, 389
Biomimetic chemistry, **1**, 553
Biosynthesis of sterols, **1**, 259
Biosynthetic products from arachidonic acid, **6**, 489
—— studies, carbon-13 nuclear magnetic resonance in, **4**, 497
Blood groups, human, and carbohydrate chemistry, **7**, 423
Bond strengths, CH, in simple organic compounds: effects of conformation and substitution, **7**, 399
—— valences—a simple structural model for inorganic chemistry, **7**, 359
Bredt's rule, **3**, 41
Brønsted relation—recent developments, **2**, 475
Butadiene, polymerization and copolymerization of, **6**, 235

Calciferols, hormonal: chemistry of 'vitamin' D, **6**, 83
Calorimetric investigations of hydrogen bond and charge transfer complexes, **3**, 193
Cancer and chemicals, **4**, 289
Carbohydrate chemistry and human blood groups, **7**, 423
Carbohydrate-directed macromolecules, transition-metal oxide chelates of, **8**, 221
Carbohydrate–protein complexes, glycoproteins, and proteoglycans, of human tissues, chemical aspects of, **2**, 355
Carbohydrates to enzyme analogues, **8**, 85
Carbon-13 nuclear magnetic resonance in biosynthetic studies, **4**, 497
Carbonium ions, carbanions, and radicals, chirality in, **2**, 397
Carbonyl compounds, photochemistry of, **1**, 465
Catalysis and surface chemistry, new perspectives, **6**, 373
Catalysis, homogeneous, and organometallic chemistry, the 16 and 18 electron rule in, **1**, 337
—— of the olefin metathesis reaction, **4**, 155

CENTENARY LECTURE. Biomimetic chemistry, **1**, 553
CENTENARY LECTURE. Light scattering in pure liquids and solutions, **6**, 109
CENTENARY LECTURE. Quadruple bonds and other multiple metal to metal bonds, **4**, 27
CENTENARY LECTURE. Rotationally and vibrationally inelastic scattering of molecules, **3**, 407
CENTENARY LECTURE. Systematic development of strategy in the synthesis of polycyclic polysubstituted natural products: the aconite alkaloids, **6**, 413
CENTENARY LECTURE. Three-dimensional structures and chemical mechanisms of enzymes, **1**, 319
Charge transfer and hydrogen bond complexes, calorimetric investigations of, **3**, 193
Chemical applications of advances in Fourier transform spectroscopy, **4**, 569
—— aspects of affinity chromatography, **2**, 249
—— —— of glycoproteins, proteoglycans, and carbohydrate–protein complexes of human tissues, **2**, 355
—— interpretations of molecular wavefunctions, **5**, 79
Chemically-induced dynamic electron polarization (CIDEP), role in chemistry, **8**, 29
Chemicals in rodent control, **1**, 381
—— which control plant growth, **6**, 261
Chemistry and binding properties of aluminium phosphates, **6**, 173
CHEMISTRY AND FLAVOUR
I Molecular Structure and Organoleptic Quality, **7**, 167
II Application of Research Findings to the Development of Commercial Flavourings, **7**, 177
III Safety Evaluation of Natural and Synthetic Flavourings, **7**, 185
IV The Influence of Legislation on Research in Flavour Chemistry, **7**, 195
V The Development of Flavour in Potable Spirits, **7**, 201
VI The Influence of Flavour Chemistry on Consumer Acceptance, **7**, 212
Chemistry and the new industrial revolution, **5**, 317
——, —a topological subject, **2**, 457
—— of aphids and scale insects, **4**, 263
—— of azidoquinones and related compounds, **2**, 415
——, of dental cements, **7**, 265
—— of dyeing, **1**, 145
—— of homonuclear sulphur species, **2**, 233
—— of long-chain phenols of non-isoprenoid origin, **8**, 499
—— of the production of organic isocyanates, **3**, 209
—— of transition-metal carbene complexes and their role as reaction intermediates, **2**, 99
—— of 'vitamin' D: the hormonal calciferols, **6**, 83
——, some considerations on the philosophy of, **5**, 203
Chirality in carbonium ions, carbanions, and radicals, **2**, 397
Chlorophyll chemistry, n.m.r. spectral change as a probe, **6**, 467
Chromatography, affinity, chemical aspects of, **2**, 249
Cis- and *trans*-effects of ligands, **2**, 163
Clathrates and molecular inclusion phenomena, **7**, 65
Collisional transfer of rotational energy and spectral lineshapes, **7**, 219
Compartmental ligands: routes to homo- and hetero-dinuclear complexes, **8**, 199
Complex hydride reducing agents, the functional group selectivity of, **5**, 23
Complexes, alkali-metal, in aqueous solution, **4**, 549
—— homo- and hetero-dinuclear, routes *via* compartmental ligands, **8**, 199
Conductivity and superconductivity in polymers, **5**, 95
Conformation and substitution, effects of, on individual CH bond strengths in simple organic compounds, **7**, 399
—— of rings and neighbouring group effects, development of Haworth's concepts of, **3**, 1

Conformational analysis of some alcohols and amines: a comparison of molecular orbital theory, rotational and vibrational spectroscopy, **5**, 411
—— studies on small molecules, **1**, 293
Contribution of ion-pairing to 'memory effects', **4**, 251
Contributions of pulse radiolysis to chemistry, **7**, 235
Conversion of ammonium cyanate into urea—a saga in reaction mechanisms, **7**, 1
Co-ordination chemistry of aryldiazonium cations: aryldiazenato (arylazo) complexes of transition metals, and the aryldiazenato-nitrosyl analogy, **4**, 443
Corrin synthesis, post-B_{12} problems in, **5**, 377
Crystal field approach to absorption bands in the spectra of stars, **5**, 233
Crystals and molecules, organic, non-bonded interactions of atoms in, **7**, 133
Cyclopolymerization, **1**, 523

Dental cements, chemistry of, **7**, 265
Development of flavour in potable spirits, **7**, 201
Dielectric relaxation in polymer solutions, **1**, 49
Diffusion in liquids, the effect of isotopic substitution on, **5**, 215
Difluoroamino-radical, gas-phase kinetics of, **3**, 17
Droplets and gases, interactions in the atmosphere of, **1**, 411
Drug design, isosterism and molecular modification in, **8**, 563
—— ——, quantitative, **3**, 273
Dyeing, chemistry of, **1**, 145

Echinoderms, **1**, 1
Education, chemical, a reassessment of research in, **1**, 27
—— ——, review of research and development in the U.K., 1972—1976, **7**, 317
Effect of isotopic substitution on diffusion in liquids, **5**, 215
Electrochemical techniques, application of to study of homogeneous chemical reactions, **4**, 471
Electron as a chemical entity, **4**, 323
—— scattering spectroscopy, threshold, **3**, 467
—— spectroscopy, **1**, 355
Electronic properties of some chain and layer compounds, **5**, 51
—— transitions, vibrational intensities in, **5**, 165
Electrons, solvated, in solutions of metals, **5**, 337
Electrophilic aromatic substitutions, non-conventional, and related reactions, **3**, 167
—— *C*-nitroso-compounds, **6**, 1
Elimination reactions, isotope effect studies of, **1**, 163
Enaminones, **6**, 277
Energetics of neighbouring group participation, **2**, 295
Enumeration methods for isomers, **3**, 355
Environmental lead in perspective, **8**, 63
—— protection in the distribution of hazardous chemicals, **4**, 99
—— regulation: an international view, **5**, 431
Enzyme analogues from carbohydrates, **8**, 85
Enzymes, immobilized, **6**, 215
—— in organic synthesis, **3**, 387
——, the logic of working with, **2**, 1
——, three-dimensional structures and chemical mechanisms of, **1**, 319
Enzymic reactions, stereochemical choice in, **8**, 447
E.s.r. spectroscopy, applications to kinetics and mechanism in organic chemistry, **8**, 1
Experimental studies on the structure of aqueous solutions of hydrophobic solutes, **2**, 203

FARADAY LECTURE. The electron as a chemical entity, **4**, 323
Fats grown from wastes, **8**, 283
$Fe(CO)_4$, **7**, 527
5-Substituted pyrimidine nucleosides and nucleotides, **6**, 43
Fixation, of nitrogen, **1**, 121
Forces between simple molecules, **2**, 181
Formation of hydrocarbons by microorganisms, **3**, 309

Fourier transform spectroscopy, chemical applications of advances in, **4**, 569
Four-membered rings and reaction mechanisms, **5**, 149
Friedel–Crafts acylation of alkenes, **1**, 73
Functional group selectivity of complex hydride reducing agents, **5**, 23

Gas-phase kinetics of the difluoroamino-radical, **3**, 17
Gases, and droplets, interactions in the atmosphere of, **1**, 411
Glycoproteins, proteoglycans, and carbohydrate–protein complexes of human tissues, chemical aspects of, **2**, 355
Growth of computational quantum chemistry from 1950 to 1971, **2**, 21

Handling toxic chemicals—environmental considerations, **4**, 77
HAWORTH MEMORIAL LECTURE. The consequences of some projects initiated by Sir Norman Haworth, **2**, 145
HAWORTH MEMORIAL LECTURE. The Haworth–Hudson controversy and the development of Haworth's concepts of ring conformation and of neighbouring group effects, **3**, 1
HAWORTH MEMORIAL LECTURE. Human blood groups and carbohydrate chemistry, **7**, 507
Hazards in the chemical industry—risk management and insurance, **8**, 419
Health hazards to workers from industrial chemicals, **4**, 82
Homogeneous catalysis, and organometallic chemistry, the 16 and 18 electron rule in, **1**, 337
Homogeneous chemical reactions, application of electrochemical techniques to the study of, **4**, 471
Human blood groups and carbohydrate chemistry, **7**, 423
Hydrocarbon formation by microorganisms, **3**, 309
Hydrogen bond and charge transfer complexes, calorimetric investigations of, **3**, 193
—— isotope effects, kinetic, recent advances in the study of, **3**, 513
Hydrophobic solutes, experimental studies on the structure of aqueous solutions of, **2**, 203

Imines, photochemistry of, **6**, 63
Immobilized enzymes, **6**, 215
Importance of solvent internal pressure and cohesion to solution phenomena, **4**, 211
Inclusion phenomena, molecular, and clathrates, **7**, 65
Individual CH bond strengths in simple organic compounds: effects of conformation and substitution, **7**, 399
Industry, chemical, hazards in: risk management and insurance, **8**, 419
Influence of flavour chemistry on consumer acceptance, **7**, 212
Influence of legislation on research in flavour chemistry, **7**, 195
Infrared and Raman vibrational spectroscopy in inorganic chemistry, **4**, 107
INGOLD LECTURE. Four-membered rings and reaction mechanisms, **5**, 149
Inorganic chemistry, bond valences, a simple structural model for, **7**, 359
Inorganic pyro-compounds $M_a[(X_2O_7)_b]$, **5**, 269
Insect attractants of natural origin, **2**, 75
Insecticides, a new group of: synthetic pyrethroids, **7**, 473
Interactions in the atmosphere of droplets and gases, **1**, 411
——, metal–metal, in transition-metal complexes containing infinite chains of metal atoms, **1**, 99
——, non-bonded, of atoms in organic crystals and molecules, **7**, 133
Introducing a new agricultural chemical, **4**, 77
Ion–molecule reactions in the evolution of simple organic molecules in interstellar clouds and planetary atmospheres, **6**, 295
Ion-pairing, contribution to 'memory effects', **4**, 251
Isocyanates and ketens, a mechanistic comparison of acylation by, **4**, 231
——, organic, chemistry of the production of, **3**, 209
Isomer enumeration methods, **3**, 355

Isosterism and molecular modification in drug design, **8**, 563
Isotope effect studies of elimination reactions, **1**, 163
Isotopic substitution effects on diffusion in liquids, **5**, 215

JOHN JEYES LECTURE. Chemicals which control plant growth, **6**, 261

KELVIN LECTURE. Across the living barrier, **6**, 325
Ketens and isocyanates, a mechanistic comparison of acylation by, **4**, 231
Kinetics and mechanism in organic chemistry, applications of e.s.r. spectroscopy to, **8**, 1
——, gas-phase, of the difluoroamino-radical, **3**, 17
—— of reactions in aqueous mixtures, **4**, 55

β-Lactams, synthetic routes to, **5**, 181
Lanthanide shift reagents in nuclear magnetic resonance spectroscopy, **2**, 49
Laser light scattering, quasielastic, **2**, 325
Laser spectroscopy of ultra-trace quantities, **8**, 367
Lasers, tunable, **3**, 293
Lead environmental, in perspective, **8**, 63
Ligands, *cis*- and *trans*-effects of, **2**, 163
——, compartmental: routes to homo- and hetero-dinuclear complexes, **8**, 199
Liquid, surface of, **7**, 329
LIVERSIDGE LECTURE. Recent advances in the study of kinetic hydrogen isotope effects, **3**, 513
LIVERSIDGE LECTURE. The surface of a liquid, **7**, 329

Macrocyclic ligands, synthetic, transition-metal complexes of, **4**, 421
Main group elements—ring, cage, and cluster compounds of, **8**, 315
Mechanisms, chemical, and three-dimensional structures of enzymes, **1**, 319
MELDOLA MEDAL LECTURE. Chemical aspects of glycoproteins, proteoglycans, and carbohydrate–protein complexes of human tissues, **2**, 355
MELDOLA MEDAL LECTURE. $Fe(CO)_4$, **7**, 527
MELDOLA MEDAL LECTURE. Molecular collisions and the semiclassical approximation, **5**, 125
MELDOLA MEDAL LECTURE. Molecular Shapes, **7**, 507
MELDOLA MEDAL LECTURE. N.m.r. spectral change as a probe of chlorophyll chemistry, **6**, 467
Meldrum's acid, **7**, 345
Metal–metal bonding and metalloboranes, **3**, 231
Metal-ion-promoted reactions of organo-sulphur compounds **6**, 345
Metalloboranes and metal–metal bonding, **3**, 231
—— bonds, multiple (especially quadruple, **4**, 27
—— interactions in transition-metal complexes containing infinite chains of metal atoms, **1**, 99
Metals, binding to proteins, **6**, 139
Micelle-forming surfactant solutions, photophysics of molecules in, **7**, 453
Micelles in aqueous solution, **6**, 25
Microbes, use in the petrochemical industry, **8**, 297
Micro-organisms, protein production by, **8**, 143
Molecular aspects of biological surfaces, **8**, 389
—— collisions and the semiclassical approximation, **5**, 125
—— orbital theory, comparison with rotational and vibrational spectroscopy in conformational analysis of alcohols and amines, **5**, 411
—— shapes, **7**, 507
—— structure and organoleptic quality, **7**, 167
—— wavefunctions, chemical interpretations, of, **5**, 79
Monoalkyltriazenes, **7**, 377
Motion, molecular, and time-correlation functions, **7**, 89
Multistability in open chemical reaction systems, **5**, 359

Natural products from echinoderms, **1**, 1
—— ——, polycyclic polysubstituted, systematic development of strategy in, **6**, 413

Neighbouring-group effects and ring conformation, development of Haworth's concepts of, **3**, 1
—— participation, energetics of, **2**, 295
New perspectives in surface chemistry and catalysis, **6**, 373
Nitrogen fixation, **1**, 121
C-Nitroso-compounds, electrophilic, **6**, 1
Non-bonded interactions of atoms in organic crystals and molecules, **7**, 133
Non-conventional electrophilic aromatic substitutions and related reactions, **3**, 167
Nuclear magnetic resonance and the periodic table, **5**, 1
——, carbon-13, in biosynthetic studies, **4**, 497
—— —— ——. methods (new) for tracing the future of hydrogen in biosynthesis, **8**, 539
—— —— —— spectral change as a probe of chlorophyll chemistry, **6**, 467
—— —— —— spectroscopy, lanthanide shift reagents in, **2**, 49
—— —— —— spectroscopy: spin–lattice relaxation, **4**, 401
Nucleosides and nucleotides, pyrimidine, 5-substituted, **6**, 43
NYHOLM MEMORIAL LECTURE. Forward from Nyholm's Marchon Lecture, **3**, 373
NYHOLM MEMORIAL LECTURE. Growth, change, challenge, **5**, 253
NYHOLM MEMORIAL LECTURE. Ring, cage, and cluster compounds of the main group elements, **8**, 315

Olefin metathesis and its catalysis, **4**, 155
Olefinic compounds, photochemistry of, **3**, 329
Organic chemistry of superoxide, **6**, 195
Organoboranes as reagents for organic synthesis, preparation of, **3**, 443
Organoborates in organic synthesis: the use of alkenyl-, alkynyl-, and cyano-borates as synthetic intermediates, **6**, 393
Organometallic chemistry and homogeneous catalysis, the 16 and 18 electron rule in, **1**, 337
Organo-sulphur compounds, metal-ion-promoted reactions of, **6**, 345
Organo-transition-metal complexes: stability, reactivity, and orbital correlations, **2**, 271

PEDLER LECTURE. Porphyrins and related ring systems, **4**, 1
Phase boundaries, reactivity of organic molecules at, **1**, 229
Phenols, long-chain, of non-isoprenoid origin, **8**, 499
Philosophy of chemistry, some considerations, **5**, 203
Phosphates, aluminium, the chemistry and binding properties of, **6**, 173
Phosphorus compounds, tervalent, in organic synthesis, **3**, 87
Photochemistry of azobenzene and its derivatives, **1**, 481
—— of carbonyl compounds, **1**, 465
—— of imines, **6**, 63
—— of olefinic compounds, **3**, 329
—— of organic sulphur compounds, **4**, 523
—— of the uranyl ion, **3**, 139
—— of transition-metal co-ordination compounds—a survey, **1**, 241
Photodegradation and stabilization of commercial polyolefins, **4**, 533
Photophysics of molecules in micelle-forming surfactant solutions, **7**, 453
Plant growth, control by chemicals, **6**, 261
Polymer solutions, dielectric relaxation in, **1**, 49
—— supports, insoluble, use in organic chemical synthesis, **3**, 65
Polymerization and copolymerization of butadiene, **6**, 235
Polymers, conductivity and superconductivity in, **5**, 95
Polyolefins, commercial, photodegradation and stabilization of, **4**, 533
Porphyrins and related ring systems, **4**, 1
Post-B_{12} problems in corrin synthesis, **5**, 377
Preparation of organoboranes: reagents for organic synthesis, **3**, 443
PRESIDENTIAL ADDRESS 1976. Chemistry and the new industrial revolution, **5**, 317

Properties and syntheses of sweetening agents, **6**, 431
Prostaglandins, thromboxanes, PGX: biosynthetic products from arachidonic acid, **6**, 489
——, tomorrow's drugs, **4**, 589
Prostanoids, total syntheses of, **2**, 29
Protein production by micro-organisms, **8**, 143
Proteins, binding of heavy metals to, **6**, 139
Pulse radiolysis, contributions to chemistry, **7**, 235
Pyrimidine nucleosides and nucleotides, 5-substituted, **6**, 43
Pyro-compounds, inorganic, $M_a[(X_2O_7)_b]$, **5**, 269

Quadruple bonds and other multiple metal to metal bonds, **4**, 27
Quantitative drug design, **3**, 273
Quantum chemistry, computational, growth of from 1950 to 1971, **2**, 21
—— mechanical tunnelling in chemistry, **1**, 211
Quasielastic laser light scattering, **2**, 325

Radioactive and toxic wastes: a comparison of their control and disposal, **4**, 90
Radiolysis, pulse, contributions to chemistry, **7**, 235
Raman and infrared vibrational spectroscopy in inorganic chemistry, **4**, 107
Reaction mechanisms, four-membered rings and, **5**, 149
—— ——, the conversion of ammonium cyanate into urea, **7**, 1
Reactivity of organic molecules at phase boundaries, **1**, 229
Recent advances in the study of kinetic hydrogen isotope effects, **3**, 513
Research in chemical education: a reassessment **1**, 27
RESOURCES CONSERVATION BY NOVEL BIOLOGICAL PROCESSES
I Grow Fats from Wastes, **8**, 283
II The Use of Microbes in the Petrochemical Industry, **8**, 297
III Utilization of Agricultural and Food Processing Wastes containing Carbohydrates, **8**, 309
Review of chemical education research and development in the U.K., 1972—1976, **7**, 317
Ring, cage, and cluster compounds of the main group elements, **8**, 315
ROBERT ROBINSON LECTURE. Post-B_{12} problems in corrin synthesis, **5**, 377
ROBERT ROBINSON LECTURE. The logic of working with enzymes, **2**, 1
Rodent control, chemicals in, **1**, 381
Role of chemically-induced dynamic electron polarization (CIDEP) in chemistry, **8**, 29
Rotationally and vibrationally inelastic scattering of molecules, **3**, 407

Safety evaluation of natural and synthetic flavourings, **7**, 185
Scale insects and aphids, chemistry of, **4**, 263
Silicon in organic synthesis, **7**, 15
16 and 18 Electron rule in organometallic chemistry and homogeneous catalysis, **1**, 337
Small molecules, conformation studies on, **1**, 293
Solids, surface energy of, **1**, 445
Solute–solvent interactions, spectroscopic studies of, **5**, 297
Solution phenomena, the importance of solvent internal pressure and cohesion, **4**, 211
Solutions of metals: solvated electrons, **5**, 337
Solvent internal pressure and cohesion, importance to solution phenomena, **4**, 211
Some considerations on the philosophy of chemistry, **5**, 203
Some recent developments in chemistry teaching in schools, **1**, 495
Spectra of stars, absorption bands in, a crystal field approach, **5**, 233
Spectral lineshapes, collisional transfer of rotational energy with, **7**, 219
Spectroscopic studies of solute–solvent interactions, **5**, 297
Spectroscopy, electron, **1**, 355
——, Fourier transform, chemical applications of advances in, **4**, 569
——, laser, of ultra-trace quantities, **8**, 367

——, rotational and vibrational, comparison with molecular orbital theory in confirmational analysis of alcohols and amines, **5**, 411
——, threshold electron scattering, **3**, 467
Spin–lattice relaxation: a fourth dimension for proton n.m.r. spectroscopy, **4**, 401
Stability, reactivity, and orbital correlations of organo-transition-metal complexes, **2**, 271
Stereochemical choice in enzymic reactions, **8**, 447
Sterols, biosynthesis of, **1**, 259
Structure of aqueous solutions of hydrophobic solutes, experimental studies on, **2**, 203
Substitution and conformation, effects of, on individual CH bond strengths in simple organic compounds, **7**, 399
Sulphoximides, **4**, 189
Sulphur compounds, organic, photochemistry of, **4**, 523
Sulphur, organic compounds of, metal-ion-promoted reactions of, **6**, 345
—— species, homonuclear, chemistry of, **2**, 233
Superconductivity and conductivity in polymers, **5**, 95
Superoxide, organic chemistry of, **6**, 195
Surface chemistry and catalysis, new perspectives, **6**, 373
—— energy of solids, **1**, 445
—— modified electrodes, **8**, 259
—— of a liquid, **7**, 329
Surfaces, biological, molecular aspects of, **8**, 389
——, solid, their acidity, **8**, 475
Sweetening agents, properties and syntheses of, **6**, 431
Syntheses and properties of sweetening agents, **6**, 431
Syntheses, total, of prostanoids, **2**, 29
Synthesis and synthetic utility of halolactones, **8**, 171
——, of corrins, post-B_{12} problems in, **5**, 377
—— of polycyclic polysubstituted natural products, systematic development of strategy in, **6**, 413
——, organic, enzymes in, **3**, 387
——, organic, preparation of organoboranes as reagents for, **3**, 443
——, organic, silicon in, **7**, 15
——, organic, tervalent phosphorus compounds in, **3**, 87
——, organic, the use of organoborates as synthetic intermediates, **6**, 393
——, organic, use of inorganic polymer supports in, **3**, 65
Synthetic pyrethroids, a new group of insecticides, **7**, 473
—— routes to β-lactams, **5**, 181
Systematic development of strategy in the synthesis of polycyclic polysubstituted natural products: the aconite alkaloids, **6**, 413

TATE AND LYLE LECTURE. From carbohydrates to enzyme analogues, **8**, 85
TATE AND LYLE LECTURE. Spin–lattice relaxation: a fourth dimension for proton n.m.r. spectroscopy, **4**, 401
TATE AND LYLE LECTURE. Transition-metal oxide chelates of carbohydrate-directed macromolecules, **8**, 221
Teaching of chemistry in schools, some recent developments in, **1**, 495
Tervalent phosphorus compounds in organic synthesis, **3**, 87
Three-dimensional structures and chemical mechanisms of enzymes, **1**, 319
Threshold electron scattering spectroscopy, **3**, 467
Thromboxanes, prostaglandins, PGX: biosynthetic products of arachidonic acid, **6**, 489
TILDEN LECTURE. Applications of e.s.r. spectroscopy to kinetics and mechanism in organic chemistry, **8**, 1
TILDEN LECTURE. Concerning stereochemical choice in enzymic reactions, **8**, 447
TILDEN LECTURE. Electrophilic *C*-nitroso-compounds, **6**, 1
TILDEN LECTURE. New perspectives in surface chemistry and catalysis, **6**, 373
TILDEN LECTURE. Valence in transition-metal complexes, **1**, 431
Time-correlation functions and molecular motion, **7**, 89
Topological subject—chemistry, **2**, 457

Transition-metal carbene complexes, chemistry and role as reaction intermediates, **2**, 99
—— complexes, containing infinite chains of metal atoms, metal–metal interactions in, **1**, 99
—— complexes of synthetic macrocyclic ligands, **4**, 421
—— complexes, valence in, **1**, 431
—— co-ordination compounds, photochemistry of, **1**, 241
—— oxide chelates of carbohydrate-directed macromolecules, **8**, 221
Tunable lasers, **3**, 293

Uranyl ion photochemistry of, **3**, 139
Use of insoluble polymer supports in organic chemical synthesis, **3**, 65
Utilization of agricultural and food processing wastes containing carbohydrates, **8**, 309

Valence in transition-metal complexes, **1**, 431
Valences, bond, a simple structural model for inorganic chemistry, **7**, 359
Vibrational infrared and Raman spectroscopy in inorganic chemistry, **4**, 107
—— intensities in electronic transitions, **5**, 165
Vibrationally and rotationally inelastic scattering of molecules, **3**, 407
'Vitamin' D, chemistry of: the hormonal calciferols, **6**, 83